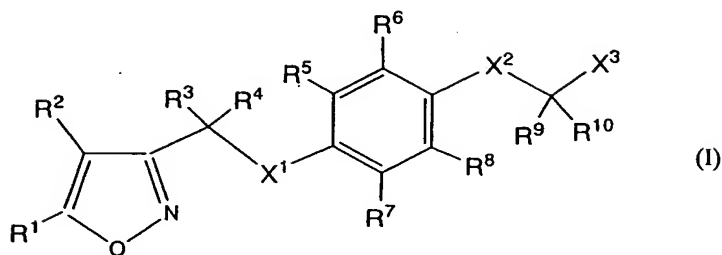


CLAIMS

1. A compound of the formula (I):



(wherein

R¹ is halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R² is hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R³ and R⁴ are each independently hydrogen, halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl,

optionally substituted aryl or optionally substituted heterocycle,

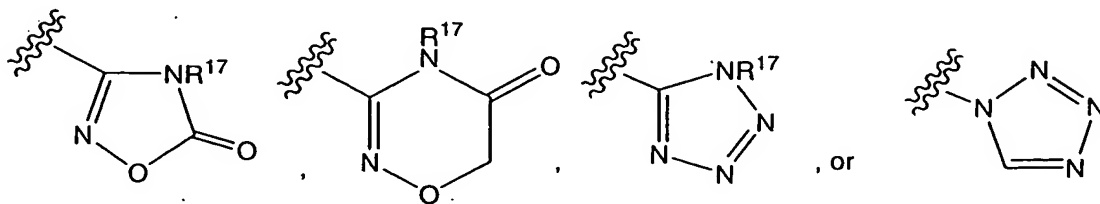
R⁵, R⁶, R⁷ and R⁸ are each independently hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R⁹ and R¹⁰ are each independently hydrogen, halogen, cyano, optionally substituted lower alkyl, optionally substituted lower alkoxy, optionally substituted amino or optionally substituted aryl,

X¹ is -O-, -S-, -NR¹¹- (wherein R¹¹ is hydrogen, optionally substituted lower alkyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl), -CR¹²R¹³CO-, -(CR¹²R¹³)mO-, -(CR¹²R¹³)mS- or -O(CR¹²R¹³)m- (wherein R¹² and R¹³ are each independently hydrogen or lower alkyl and m is an integer between 1 and 3),

X² is a bond, -O-, -S-, -SO-, -SO₂-, -CR²⁶=CR²⁷- (wherein R²⁶ and R²⁷ are each independently hydrogen or lower alkyl), -NR¹⁴- (wherein R¹⁴ is hydrogen, optionally substituted lower alkyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl), -CR¹⁵R¹⁶- (wherein R¹⁵ and R¹⁶ are each independently hydrogen or lower alkyl) or -COCR²⁴R²⁵- (wherein R²⁴ and R²⁵ are each independently hydrogen or lower alkyl), and

X³ is COOR¹⁷, C(=NR¹⁷)NR¹⁸OR¹⁹,



(wherein R¹⁷ - R¹⁹ are each independently hydrogen or lower alkyl),
provided that,

R^6 and R^{14} can be taken together with the neighboring atom to form a ring,
 R^6 , R^9 and R^{10} can be taken together with the neighboring carbon atom to form a ring,
 R^6 and R^9 can be taken together with the neighboring carbon atom to form a ring,
 R^6 , R^{15} and R^{16} can be taken together with the neighboring carbon atom to form a ring,
 R^6 and R^{24} can be taken together with the neighboring carbon atom to form a ring,
 R^9 and R^{16} can be joined together to form a bond,
 R^9 and R^{10} can be taken together to form a ring,
 R^9 and R^{25} can be joined together to form a bond,
 R^9 , R^{10} and R^{15} can be taken together with the neighboring carbon atom to form a ring,
 R^{10} and R^{15} can be joined together to form a bond, and
 R^{10} and R^{15} can be taken together with the neighboring carbon atom to form a ring)
 (provided that, a compound wherein R^1 is an unsubstituted lower alkyl, R^5 and R^7 are
 bromo and X^1 is $-O-$, a compound wherein R^1 is an unsubstituted lower alkyl and X^2 is
 $-CH_2-$ and a compound wherein R^2 is hydrogen and X^2 is $-O-$ are excluded.),
 a pharmaceutically acceptable salt or a solvate thereof.

2. The compound of claim 1 wherein R^1 is halogen, optionally substituted lower alkyl, optionally substituted aryl or optionally substituted heterocycle, a pharmaceutically acceptable salt or a solvate thereof.

3. The compound of claim 1 wherein R^2 is halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted alkynyl, optionally substituted lower alkoxy, optionally substituted acyl, optionally substituted carbamoyl, optionally substituted aryl or optionally substituted arylthio, a pharmaceutically acceptable salt or a solvate thereof.

4. The compound of claim 1 wherein R^2 is hydrogen, halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted alkynyl, optionally substituted lower alkoxy, optionally substituted acyl, optionally substituted carbamoyl, optionally substituted aryl or optionally substituted arylthio, a pharmaceutically acceptable salt or a solvate thereof.

5. The compound of claim 1 wherein R^3 and R^4 are each independently hydrogen, lower alkyl or optionally substituted aryl, a pharmaceutically acceptable salt or a

solvate thereof.

6. The compound of claim 1 wherein R⁵, R⁶, R⁷ and R⁸ are each independently hydrogen, halogen, optionally substituted lower alkyl or optionally substituted lower alkoxy,

provided that,

R⁶ and R¹⁴ can be taken together with the neighboring atom to form a ring,

R⁶, R⁹ and R¹⁰ can be taken together with the neighboring carbon atom to form a ring,

R⁶ and R⁹ can be taken together with the neighboring carbon atom to form a ring,

R⁶, R¹⁵ and R¹⁶ can be taken together with the neighboring carbon atom to form a ring,

and R⁶ and R²⁴ can be taken together with the neighboring carbon atom to form a ring,

a pharmaceutically acceptable salt or a solvate thereof.

7. The compound of claim 1 wherein R⁹ and R¹⁰ are each independently hydrogen, halogen, cyano, optionally substituted lower alkyl or optionally substituted lower alkoxy,

provided that,

R⁹, R¹⁰ and R⁶ can be taken together with the neighboring carbon atom to form a ring,

R⁹ and R⁶ can be taken together with the neighboring carbon atom to form a ring,

R⁹ and R¹⁶ can be joined together to form a bond,

R⁹ and R¹⁰ can be taken together to form a ring,

R⁹ and R²⁵ can be joined together to form a bond,

R⁹, R¹⁰ and R¹⁵ can be taken together with the neighboring carbon atom to form a ring,

R¹⁰ and R¹⁵ can be joined together to form a bond, and

R¹⁰ and R¹⁵ can be taken together with the neighboring carbon atom to form a ring,

a pharmaceutically acceptable salt or a solvate thereof.

8. The compound of claim 1 wherein X¹ is O, S, NR¹¹ (wherein R¹¹ is hydrogen or optionally substituted lower alkyl) or CH₂CO, a pharmaceutically acceptable salt or a solvate thereof.

9. The compound of claim 1 wherein X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

10. The compound of claim 1 wherein R¹ is lower alkyl, optionally substituted aryl

(the substituent is halogen, optionally substituted lower alkyl or optionally substituted lower alkoxy) or heterocycle,

R² is hydrogen, halogen, optionally substituted lower alkyl (the substituent is halogen, hydroxy, optionally substituted lower alkoxy, lower alkylamino, optionally substituted imino, lower alkylsulfonyl, optionally substituted aryl or heterocycle), optionally substituted lower alkynyl (the substituent is aryl), optionally substituted lower alkoxy (the substituent is halogen), alkoxycarbonyl, acyl, carbamoyl, optionally substituted aryl (the substituent is optionally substituted lower alkyl or optionally substituted lower alkoxy) or arylthio,

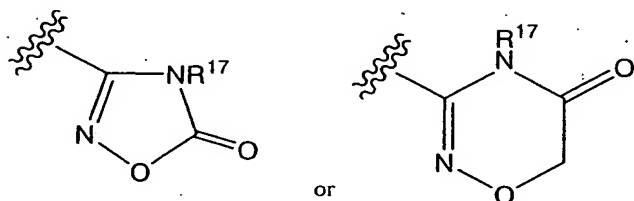
R³ and R⁴ are each independently, hydrogen, lower alkyl or optionally substituted aryl (the substituent is halogen),

R⁵, R⁶, R⁷ and R⁸ are each independently, hydrogen, halogen, optionally substituted lower alkyl (the substituent is halogen) or optionally substituted lower alkoxy (the substituent is halogen),

R⁹ and R¹⁰ are each independently hydrogen, halogen, cyano, lower alkyl or lower alkoxy,

X¹ is O, S, NH or CH₂CO, and

X³ is COOR¹⁷, C(=NR¹⁷)NR¹⁸OR¹⁹,



(wherein R¹⁷ - R¹⁹ are each independently hydrogen or lower alkyl),

provided that,

R⁶ and R¹⁴ can be taken together with the neighboring atom to form a ring,

R⁶, R⁹ and R¹⁰ can be taken together with the neighboring carbon atom to form a ring,

R⁶ and R⁹ can be taken together with the neighboring carbon atom to form a ring,

R⁶, R¹⁵ and R¹⁶ can be taken together with the neighboring carbon atom to form a ring,

R⁶ and R²⁴ can be taken together with the neighboring carbon atom to form a ring,
R⁹ and R¹⁶ can be joined together to form a bond,
R⁹ and R¹⁰ can be taken together to form a ring,
R⁹ and R²⁵ can be joined together to form a bond,
R⁹, R¹⁰ and R¹⁵ can be taken together with the neighboring carbon atom to form a ring,
R¹⁰ and R¹⁵ can be joined together to form a bond, and
R¹⁰ and R¹⁵ can be taken together with the neighboring carbon atom to form a ring,
a pharmaceutically acceptable salt or a solvate thereof.

11. The compound of any one of claim 1 - 10 wherein X² is a bond, -O-, -SO-, -SO₂- or -CR²⁶=CR²⁷- (wherein R²⁶ and R²⁷ are each independently hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

12. The compound of any one of claim 1 - 10 wherein X² is -CR¹⁵R¹⁶- (wherein R¹⁵ is hydrogen or lower alkyl and R¹⁶ and R⁹ are joined together to form a bond or wherein R¹⁶ and R⁹ are joined together to form a bond and R¹⁵ and R¹⁰ are joined together to form a bond), a pharmaceutically acceptable salt or a solvate thereof.

13. The compound of any one of claim 1 - 10 wherein X² is -NR¹⁴- (wherein R¹⁴ is hydrogen, lower alkyl, acyl or lower alkylsulfonyl or wherein R¹⁴ and R⁶ are taken together with the neighboring atom to form a ring), -CR¹⁵R¹⁶- (wherein R¹⁵, R¹⁶ and R⁶ are taken together with the neighboring carbon atom to form a ring, wherein R⁹, R¹⁰ and R¹⁵ can be taken together with the neighboring carbon atom to form a ring or wherein R¹⁵ and R¹⁰ are taken together with the neighboring carbon atom to form a ring and R¹⁶ and R⁹ are joined together to form a bond) or -COCR²⁴R²⁵- (wherein R²⁴ and R⁶ are taken together with the neighboring carbon atom to form a ring and R²⁵ and R⁹ are joined together to form a bond), a pharmaceutically acceptable salt or a solvate thereof.

14. The compound of claim 1 wherein R² is halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted

thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R⁹ and R¹⁰ are each independently hydrogen,

X¹ is -O-, -S-, -(CR¹²R¹³)mO- or -(CR¹²R¹³)mS- (wherein R¹² and R¹³ are each independently hydrogen or lower alkyl and m is an integer between 1 and 3),

X² is -O-, and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl),

a pharmaceutically acceptable salt or a solvate thereof.

15. The compound of claim 1 wherein R⁹ and R¹⁶ are joined together to form a bond,

R¹⁰ is hydrogen, halogen, lower alkyl, lower alkoxy or cyano,

X¹ is -O-, -S-, -(CR¹²R¹³)mO- or -(CR¹²R¹³)mS- (wherein R¹² and R¹³ are each independently hydrogen or lower alkyl and m is an integer between 1 and 3),

X² is -CR¹⁵R¹⁶- (wherein R¹⁵ is hydrogen or lower alkyl and R¹⁶ and R⁹ are joined together to form a bond), and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

16. The compound of claim 1 wherein R¹ is halogen, a substituted lower alkyl, optionally substituted aryl or optionally substituted heterocycle,

R⁹ and R¹⁰ are each independently hydrogen or lower alkyl,

X¹ is -O-, -S-, -(CR¹²R¹³)mO- or -(CR¹²R¹³)mS- (wherein R¹² and R¹³ are each independently hydrogen or lower alkyl and m is an integer between 1 and 3),

X² is a bond or -CR¹⁵R¹⁶- (wherein R¹⁵ and R¹⁶ are each independently hydrogen or lower alkyl), and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

17. The compound of claim 1 wherein R⁹ and R¹⁰ are each independently hydrogen,

X¹ is -O- or -S-,

X² is -NR¹⁴- (wherein R¹⁴ and R⁶ are taken together with the neighboring atom to form a ring), -CR¹⁵R¹⁶- (wherein R¹⁵, R¹⁶ and R⁶ are taken together with the neighboring carbon atom to form a ring), or -COCR²⁴R²⁵- (wherein R²⁴ and R⁶ are taken together with the neighboring carbon atom to form a ring and R²⁵ and R⁹ are joined together to form a bond), and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

18. The compound of claim 1 wherein R⁹ and R¹⁶ are joined together to form a bond,

X¹ is -O- or -S-,

X² is -CR¹⁵R¹⁶- (wherein R¹⁵ and R¹⁰ are taken together with the neighboring carbon atom to form a ring and R¹⁶ and R⁹ are joined together to form a bond or wherein R⁹, R¹⁰ and R¹⁵ are taken together with the neighboring carbon atom to form a ring); and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

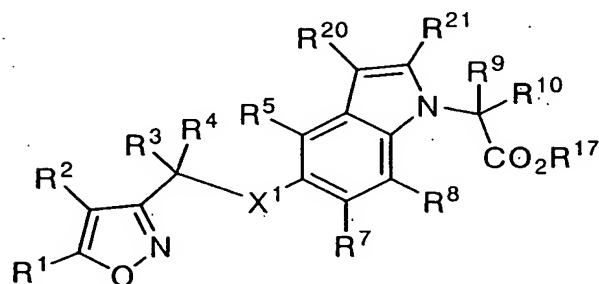
19. The compound of claim 1 wherein R⁹ and R¹⁰ are taken together to form a ring,

X¹ is -O- or -S-,

X² is a bond or -CR¹⁵R¹⁶- (wherein R¹⁵ and R¹⁶ are each independently hydrogen or lower alkyl), and

X³ is COOR¹⁷ (wherein R¹⁷ is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

20. A compound of the formula:



(wherein

R¹ is halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower

alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R² is hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R³ and R⁴ are each independently, hydrogen, halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted aryl or optionally substituted heterocycle,

R⁵, R⁷ and R⁸ are each independently hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R⁹ and R¹⁰ are each independently hydrogen, halogen, cyano, optionally substituted lower alkyl, optionally substituted lower alkoxy, optionally substituted amino or optionally substituted aryl,

R²⁰ and R²¹ are each independently hydrogen, halogen, hydroxy, cyano, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted

lower alkynyl, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted imino, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

X^1 is $-O-$, $-S-$, $-NR^{11}-$ (wherein R^{11} is hydrogen, optionally substituted lower alkyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl), $-CR^{12}R^{13}CO-$, $-(CR^{12}R^{13})_mO-$, $-(CR^{12}R^{13})_mS-$ or $-O(CR^{12}R^{13})_m-$ (wherein R^{12} and R^{13} are each independently hydrogen or lower alkyl and m is an integer between 1 and 3), and

R^{17} is hydrogen or lower alkyl), a pharmaceutically acceptable salt or a solvate thereof.

21. The compound of claim 20 wherein R^1 is optionally substituted aryl,

R^2 is optionally substituted lower alkyl,

R^3 and R^4 are each independently hydrogen or optionally substituted aryl,

R^5 , R^7 and R^8 are each independently hydrogen, optionally substituted lower alkyl or optionally substituted lower alkoxy,

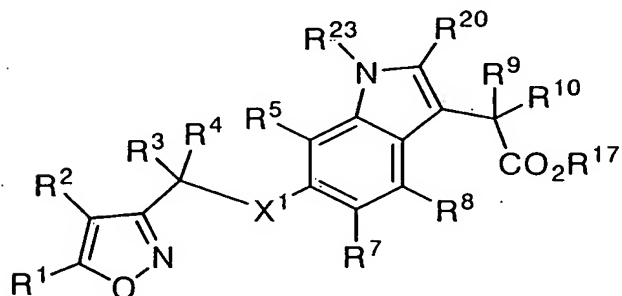
R^9 and R^{10} are each independently hydrogen or optionally substituted lower alkyl,

R^{20} and R^{21} are each independently hydrogen, cyano, optionally substituted lower alkyl or optionally substituted lower alkoxy, and

X^1 is $-O-$ or $-S-$,

a pharmaceutically acceptable salt or a solvate thereof.

22. A compound of the formula:



(wherein

R^1 is halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy,

carboxy, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R² is hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R³ and R⁴ are each independently hydrogen, halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted aryl or optionally substituted heterocycle,

R⁵, R⁷, R⁸ and R²⁰ are each independently hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R²³ is hydrogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl, optionally substituted amino, optionally substituted aryl or optionally substituted heterocycle,

R⁹ and R¹⁰ are each independently hydrogen, halogen, cyano, optionally substituted lower alkyl, optionally substituted lower alkoxy, optionally substituted amino or optionally substituted aryl,

X¹ is -O-, -S-, -NR¹¹- (wherein R¹¹ is hydrogen, optionally substituted lower alkyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl), -CR¹²R¹³CO-, -(CR¹²R¹³)_mO-, -(CR¹²R¹³)_mS- or -O(CR¹²R¹³)_m- (wherein R¹² and R¹³ are each independently hydrogen or lower alkyl and m is an integer between 1 and 3), and

R¹⁷ is hydrogen or lower alkyl),

a pharmaceutically acceptable salt or a solvate thereof.

23. The compound of claim 22 wherein R¹ is optionally substituted aryl,

R² is optionally substituted lower alkyl,

R³ and R⁴ are hydrogen,

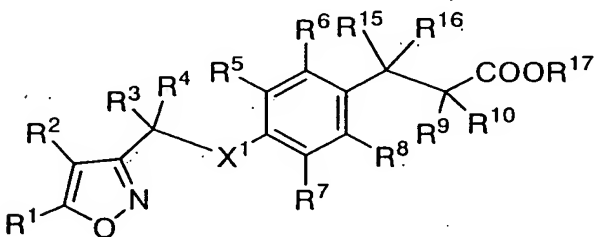
R⁵, R⁷ and R⁸ are hydrogen,

R⁹ and R¹⁰ are each independently hydrogen or optionally substituted lower alkyl,

R²⁰ and R²³ are each independently hydrogen or optionally substituted lower alkyl, and

X¹ is -O- or -S-, a pharmaceutically acceptable salt or a solvate thereof.

24. A compound of the formula:



(wherein

R¹ is halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxy carbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted

carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R^2 is hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, carboxy, optionally substituted lower alkoxycarbonyl, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted carbamoyl, optionally substituted thiocarbamoyl, optionally substituted carbamoyloxy, optionally substituted thiocarbamoyloxy, optionally substituted hydrazinocarbonyl, optionally substituted lower alkylsulfonyloxy, optionally substituted arylsulfonyloxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R^3 and R^4 are each independently hydrogen, halogen, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted aryl or optionally substituted heterocycle,

R^5 , R^6 , R^7 and R^8 are each independently hydrogen, halogen, hydroxy, optionally substituted lower alkyl, optionally substituted lower alkenyl, optionally substituted lower alkynyl, optionally substituted lower alkoxy, optionally substituted lower alkylthio, optionally substituted acyl, optionally substituted amino, optionally substituted aryl, optionally substituted aryloxy, optionally substituted arylthio or optionally substituted heterocycle,

R^9 and R^{10} are hydrogen,

X^1 is $-O-$, $-S-$, $-NR^{11}-$ (wherein R^{11} is hydrogen, optionally substituted lower alkyl, optionally substituted acyl, optionally substituted lower alkylsulfonyl or optionally substituted arylsulfonyl), $-CR^{12}R^{13}CO-$, $-(CR^{12}R^{13})mO-$, $-(CR^{12}R^{13})mS-$ or $-O(CR^{12}R^{13})m-$ (wherein R^{12} and R^{13} are each independently hydrogen or lower alkyl and m is an integer between 1 and 3),

R^{15} is lower alkyl,

R¹⁶ is hydrogen, and

R¹⁷ is hydrogen or lower alkyl)

a pharmaceutically acceptable salt or a solvate thereof.

25. The compound of claim 24 wherein R¹ is optionally substituted aryl,

R² is optionally substituted lower alkyl,

R³ and R⁴ are hydrogen,

R⁵, R⁶, R⁷ and R⁸ are each independently hydrogen, halogen, optionally substituted lower alkyl or optionally substituted lower alkoxy, and

X¹ is -O- or -S-,

a pharmaceutically acceptable salt or a solvate thereof.

26. A pharmaceutical composition comprising a compound, a pharmaceutically acceptable salt or a solvate thereof of any one of claims 1-25.

27. A pharmaceutical composition as peroxisome proliferator-activated receptors agonists, which comprises a compound, a pharmaceutically acceptable salt or a solvate thereof of any one of claims 1-25 as active ingredient..